

**Comments of Louisiana-Pacific Corporation on
Hylebos Waterway Natural Resource Damage
Settlement Proposal Report**

June 17, 2002

Louisiana-Pacific Corporation (LP) has reviewed the Public Review Draft of the *Hylebos Waterway Natural Resource Damage Settlement Proposal Report* (Settlement Proposal Report) and submits the comments that follow. Generally speaking, LP supports the pragmatic approach of the Trustees to resolve the issues associated with damages to the natural resources of the Hylebos Waterway. In the spirit of the Trustee's approach to settlement, LP is currently not questioning many of the general assumptions made in the Settlement Proposal Report such as the magnitude of the past damage to natural resources caused by chemical contaminants in the Hylebos Waterway. Nonetheless, LP is retaining its right to challenge such issues in the future if it cannot reach a settlement with the Trustees.

LP's concerns over the Settlement Proposal Report relate primarily to how the polynuclear aromatic hydrocarbon (PAH) data were applied. Because PAH's were the only substances of concern for which liability was allocated to LP, the comments are limited to PAH's. However, many of the comments are substantially valid when applied to other substances of concern. The other comments relate to the allocation determination and suggestions for making settlements easier to reach.

While the Trustees are entitled to a rebuttable presumption if they comply with NOAA's final regulations on NRDA, the burden of proof shifts back to them if a potentially responsible party (PRP) demonstrates that the damages presented by Trustees are inappropriate for some reason. Specific kinds of issues likely to be disputed include whether the evidence establishes that the injury exceeds certain thresholds, whether the damage can be linked to specific chemicals, and whether the assessment techniques are reliable. In many administrative actions, the government need only show that it has not acted arbitrarily or capriciously in making a decision. However, the rebuttable presumption is more difficult standard to meet. Some of the key assumptions in the Settlement Proposal Report would make recovery of damages very difficult if rejected by a court. These comments are intended to address some of these assumptions.

1. It is inappropriate to "correct" the HCC PAH data.

The Trustees apply a correction factor of 2.0 to account for an asserted discrepancy of magnitude between the HCC and Trustee's data for PAH's. Manipulating data sets by using

correction factors is not a generally accepted method of processing environmental data. When situations arise where the quality of data is questioned, the standard practice is to decide whether the data is usable for its intended purpose. If the data does not meet the acceptance criteria, they should be rejected. In the present matter the Trustees have expressed concern that PAH data collected by the HCC is significantly lower than the data collected by the Trustees. However, instead of rejecting it, the Trustees adjusted the HCC data to fit a preconceived notion of what measurements should have been reported.

The Trustees justify using a correction factor based on the observation that the PAH data it collected are consistently higher than the data collected by the HCC near the Trustee sampling stations. The reasons stated in the Settlement Proposal Report are: (1) the Trustee's chemists were allegedly able to expend more effort at extracting samples than the commercial laboratories that analyzed the HCC samples and (2) the Trustee chemists corrected for less than full recovery of the reference standards. This issue is difficult to evaluate because the Trustees did not disclose the values associated with the paired HCC and Trustee data.

With all due respect to the Trustee's belief that their data is better than that analyzed by the HCC, this position is not well supported nor does it reflect standard analytical practices. The statement that the Trustee chemists did a better job of preparing samples appears to be founded on speculation since the only supporting reference is a personal communication with an environmental consultant. When issues regarding interlaboratory variability arise, the generally accepted method of evaluation is to submit split samples or performance evaluation samples to the laboratories involved in the analyses and compare the results. Although there were issues regarding quality control between the Trustees and the HCC shortly after the sample results were reported, there is no evidence in the record that an interlaboratory performance evaluation was done. Consultant opinions regarding resources and relative effort warrant very little weight when they are not based on comparison samples between laboratories.

Correcting for less than full recovery is likewise a dubious practice. The percent recovery in organic analytical chemistry is generally used as a quality control factor and not as a method of adjusting data to meet a calibration standard. If the percent recovery for an analysis fails to meet the quality control acceptance criteria, the result should be rejected since insufficient or excessive recovery indicate problems with how the analytical method was performed (see, e.g., Standard Methods for the Examination of Wastewater, 19th ed., Methods 6440 B & C). The practice of adjusting data to reflect recoveries runs contrary to established quality control principles.

It should also be noted that the U.S. Environmental Protection Agency relied on the HCC data to determine what remedial actions would be required in the Hylebos Waterway. As part of the CERCLA project, this data was subject to stringent quality requirements. The Trustees do not explain why the HCC data is adequate to delineate cleanup areas but must be adjusted for NRDA purposes.

2. The correction factor used by the Trustees was inappropriately derived.

The limited information about the correlation between the Trustee and HCC paired PAH data set suggests that the data correlate poorly. The Trustees initially deleted 12 of the 28 pairs of data apparently because of nondetect values. Deleting these data not only significantly reduces the size of the data set and the power of the analysis, it creates a bias in favor of the higher concentration data when the regression is performed.

Of the remaining 16 pairs of PAH data, four to seven pairs (i.e., 25 to 44% of the pairs) were deleted as "outliers" during an attempt to verify the appropriateness of the correction factor used by the Trustees. Because the pairs and the data they represent are not identified, it is impossible to evaluate the correctness of the regression analysis. However, removing 4 to 7 pairs from a set of 16 pairs is an extraordinarily high proportion of outliers. In general, outliers should constitute less than 1 percent of a data set. The fact that so many pairs of data were removed during the correlation evaluation suggests that the data set reflects a great deal of scatter and casts doubt on whether the deleted pairs were outliers at all. A much better test of the strength of the relationship is conducting a t-test on the slopes of the regression equations.

The correction factor of 2.0 appears to be further misapplied because the Trustees omit the y-axis intercept component of the linear regression equation.¹ While the Trustees added a "0, 0" data point to weight the regression towards the x-y intercept, this technique is not the same as forcing the regression through the intercept. In effect, the method used by the Trustees is no more than a linear regression that omits the critical y-axis intercept. For example, the linear regression equations for highest and lowest paired sets described in the Settlement Proposal Report are:

$$\begin{array}{ll} 9 \text{ pair set:} & [\text{Trustee data}] = 1.939[\text{HCC data}] - 1248 \text{ } \mu\text{g/kg} \\ 12 \text{ pair set:} & [\text{Trustee data}] = 1.810[\text{HCC data}] + 2255 \text{ } \mu\text{g/kg} \end{array}$$

but instead, the Trustees used the following equation:

$$[\text{Trustee data}] = 2.0[\text{HCC data}]$$

Comparing the results from these equations demonstrates that the Trustee correction factor generally does not reflect the estimates produced by the regression equations, particularly at the lower end of the distribution that encompasses much of the data.

¹ Settlement Proposal Report, Supplement 3 to Appendix D, page 9.

<u>HCC Value</u>	<u>9 Pairs Regression</u>	<u>12 Pairs Regression</u>	<u>Trustee Method</u>
0 µg/kg	-1248 µg/kg	2255 µg/kg	0 µg/kg
500 µg/kg	-1054 µg/kg	3160 µg/kg	1000 µg/kg
1000 µg/kg	691 µg/kg	4065 µg/kg	2000 µg/kg
1500 µg/kg	1660 µg/kg	4970 µg/kg	3500 µg/kg
10,000 µg/kg	18,142 µg/kg	20,335 µg/kg	20,000 µg/kg

3. It is inappropriate to use total PAHs as the basis for assessing damages because the toxicity of individual PAHs varies significantly.

The Trustee analysis sums 16 PAH compounds at each sampling station to make a parameter referred to as total PAH. These sums were used to map the injury footprints for sediments contaminated with PAH's. The problem with this approach is that grouping all the PAH's does not accurately reflect the different degrees of toxicity among these compounds. Table 1 of Appendix D of the Settlement Proposal Report lists the various apparent effects thresholds (AET's) associated with the PAH compounds evaluated by the Trustees. The variation in toxicity among the 16 compounds is very great. For example, fluoranthene has an amphipod AET of 30,000 µg/kg whereas acenaphthene has an amphipod AET of 1,300 µg/kg. In other words, acenaphthene is about 23 times more toxic than fluoranthene to amphipods. Similar degrees of variation are associated with the other compounds and organisms.

A comparison of the PAH data for segment 1 shows that the relative proportions of PAHs among the sampling stations varies substantially. Many of the samples, such as the intertidal sample along the LP shoreline (HCC station 1206I), had detectable values for only the least toxic PAHs and did not exceed any AET's:

<u>Substance</u>	<u>Station 1206I</u>	<u>Amphipod AET</u>	<u>Echinoderm AET</u>
Anthracene	36 µg/kg	13,000 µg/kg	280 µg/kg
Phenanthrene	62 µg/kg	21,000 µg/kg	660 µg/kg
Fluoranthene	280 µg/kg	30,000 µg/kg	1,300 µg/kg
Pyrene	280 µg/kg	16,000 µg/kg	2,400 µg/kg
Benzo(a)anthracene	120 µg/kg	5,100 µg/kg	960 µg/kg
Chrysene	290 µg/kg	21,000 µg/kg	950 µg/kg
Benzofluoranthenes	260 µg/kg	9,100 µg/kg	1,800 µg/kg
Benzo(a)pyrene	46 µg/kg	3,500 µg/kg	1,100 µg/kg
Indeno(1,2,3-c,d)pyrene	32 µg/kg	4,400 µg/kg	760 µg/kg
Benzo(g,h,i)perylene	42 µg/kg	3,200 µg/kg	920 µg/kg

Several stations in Segment 1 had concentrations of individual PAH's that exceeded AET's and are likely to be much more toxic than the stations at which no AET's are exceeded.² Considering

² The stations that had PAH concentrations sufficiently high to exceed an AET are 1101S, 1104S, HY-24, HY-25, HY-26, HY-27, HY-28, 1201I, and 1203I.

the wide disparity among the toxicity of PAH compounds, it is inappropriate to use total PAH as a measure of injury. For example, a station that has 62 µg/kg of phenanthrene such as 1206I should not be assumed to present the same level of injury as a station with 170 µg/kg of the more toxic acenaphthene such as 1119S even though both stations receive the same service loss percentage in the Settlement Proposal Report.

4. Using correction factors makes application of the data to the service loss concentrations questionable.

Another problem with using correction factors is that many of the data on which the AET's are based were developed using analyses from commercial laboratories including the ones used by the HCC. This means that the AET's are based, at least in part, on data that is subject to the same limitations as alleged for the HCC data (less effort for extractions, no corrections for less recovery). This means that the methodology used to determine service loss is inappropriate because it relies on standards that are based on a combination of "corrected" and "uncorrected" data. To apply correction factors consistently would require the service loss thresholds to be reevaluated in light of whether the underlying data were corrected or not corrected.

5. The Allocations for PAH Liability in Segment 1 Appear to Need Adjustment

Allocations involving CERCLA matters are generally determined by negotiation between the responsible parties or through litigation. Although time consuming and expensive, these processes have the benefit of requiring parties to make information available and the opportunity to advocate their respective positions. In this case, the Trustees have unilaterally allocated shares of responsibility based on the distribution of contaminants, public records, and types of activities assumed to have been conducted on properties. The Settlement Proposal Report does not clearly explain how the liability associated with PAH's was allocated for the properties associated with Segment 1. However, the fact that nine of these properties received identical 2.46 percent portions of responsibility indicates that a per capita apportionment was used at some level. The lack of detail within the Settlement Proposal Report makes it impossible to understand exactly how the proportional responsibility was calculated. However, the methodology seems to disregard that certain parcels have higher concentrations of PAH's in the sediments along their waterfronts than do others. For example, the areas in front of parcels 2, 3, 5, and 6 have injury levels of "moderate" although each parcel is assigned the same proportion of responsibility as parcels with "below threshold" or "low" injury levels. Parcel 4, which is currently owned by the Puyallup Tribe but which was formerly leased by the Port of Tacoma to various log sort yard operators, has a sediment footprint with an injury level of moderate but did not receive any allocation of responsibility. Providing more detail regarding how the allocations were made would enable the parties deal with their allocation issues more expeditiously.

6. A Map of the Ecological Services Value Assigned to the Injured Habitats Would Facilitate Settlement Proposals.

The Settlement Proposal Reports describes the framework by which parties may prepare and submit settlement proposals. A map or series of maps that show the existing habitat values would be extremely useful to parties who are looking for restoration opportunity or want to be able to quantify the value of their proposed projects. Providing such a map would likely facilitate settlement proposals.

Any questions about these comments can be referred to: Bert Krages, Attorney at Law, 6665 S.W. Hampton Street, Suite 200, Portland, OR 97223, (503) 597-2525.